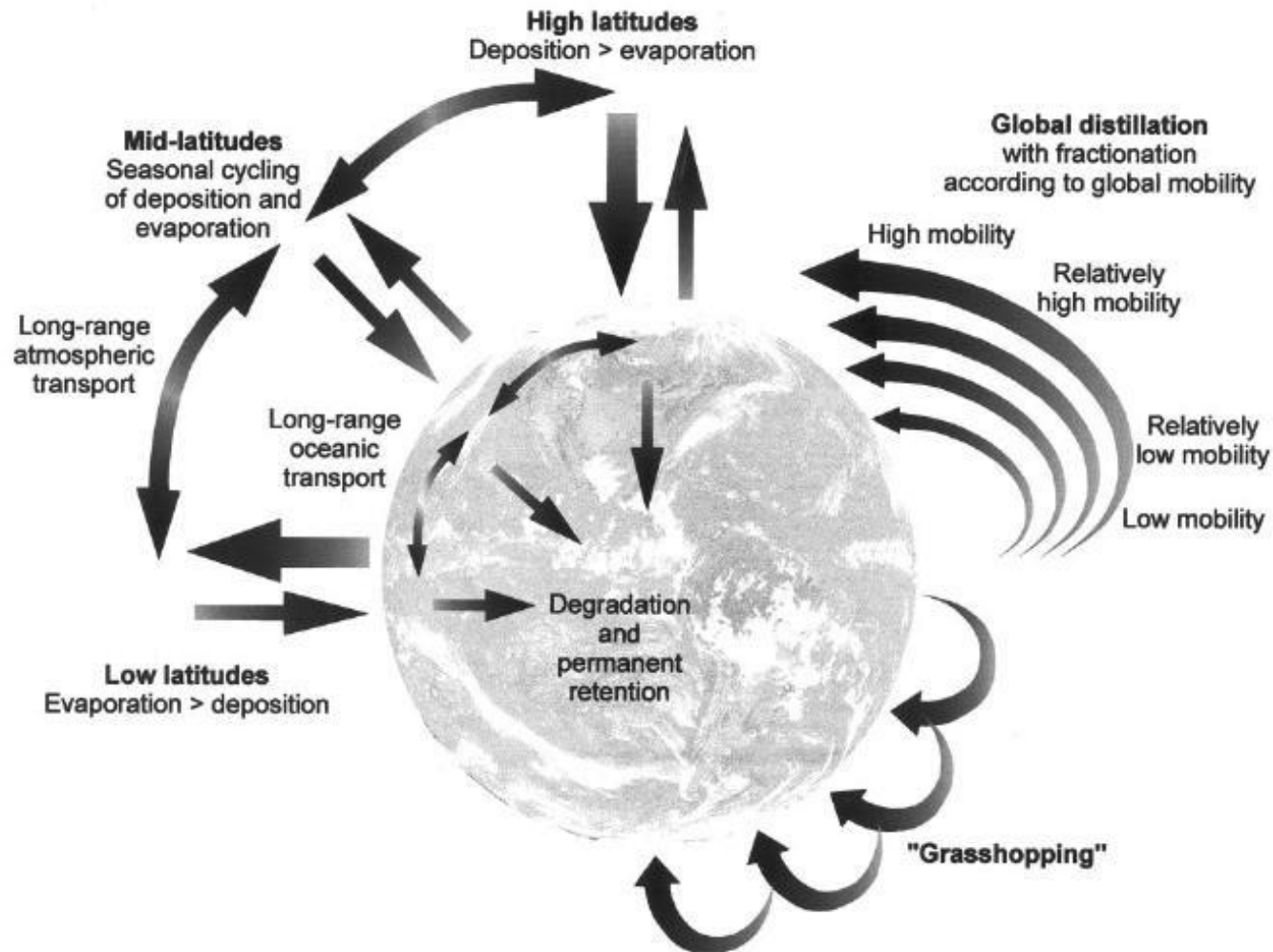


# PCBs in Pigments: A State Government Perspective

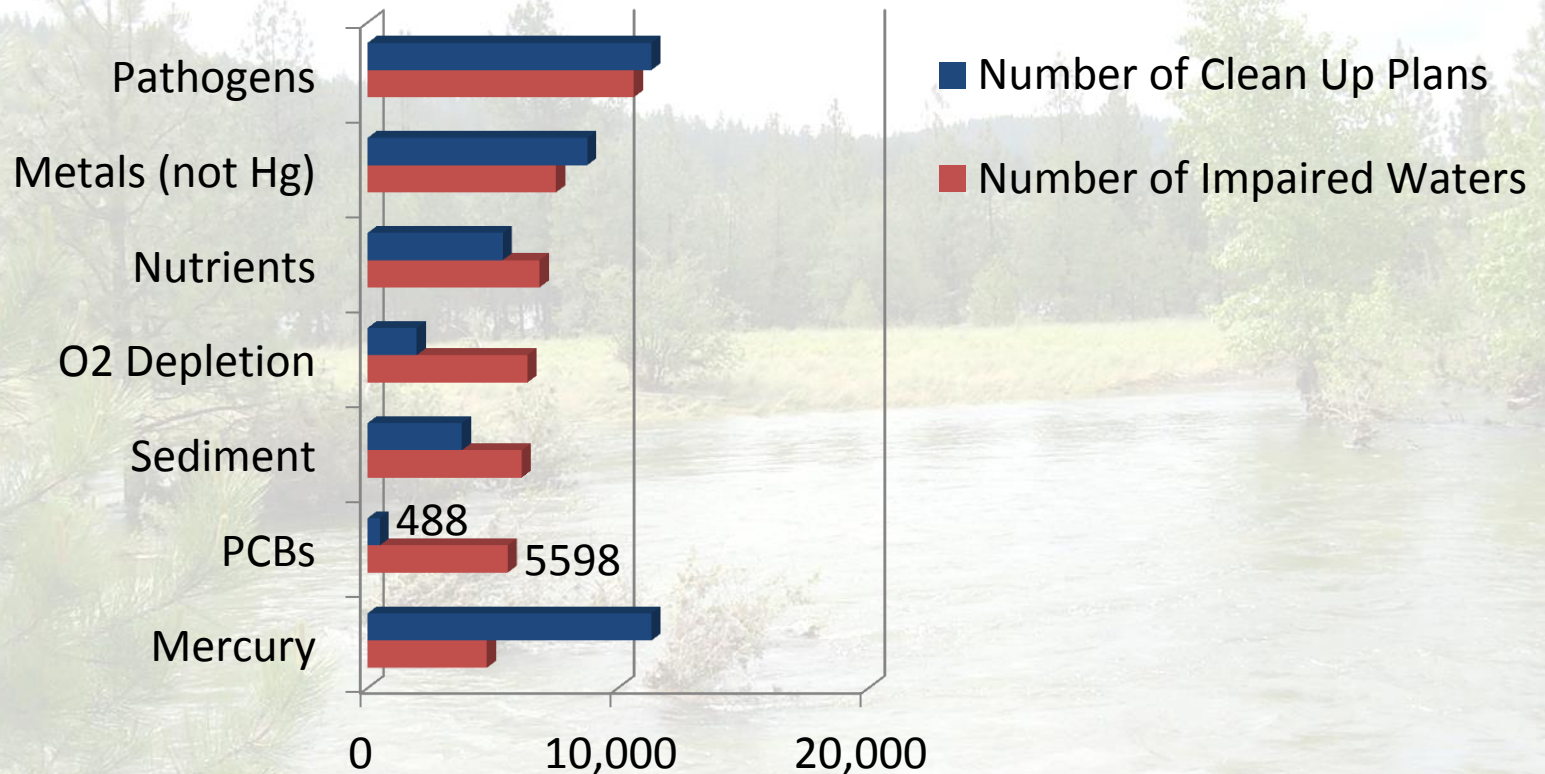


*Photography by Adriane P. Borgias © 2018*

# PCB: The Global View



# PCB: A National Water Quality Concern



## EPA Watershed Assessment, Tracking and Environmental Database

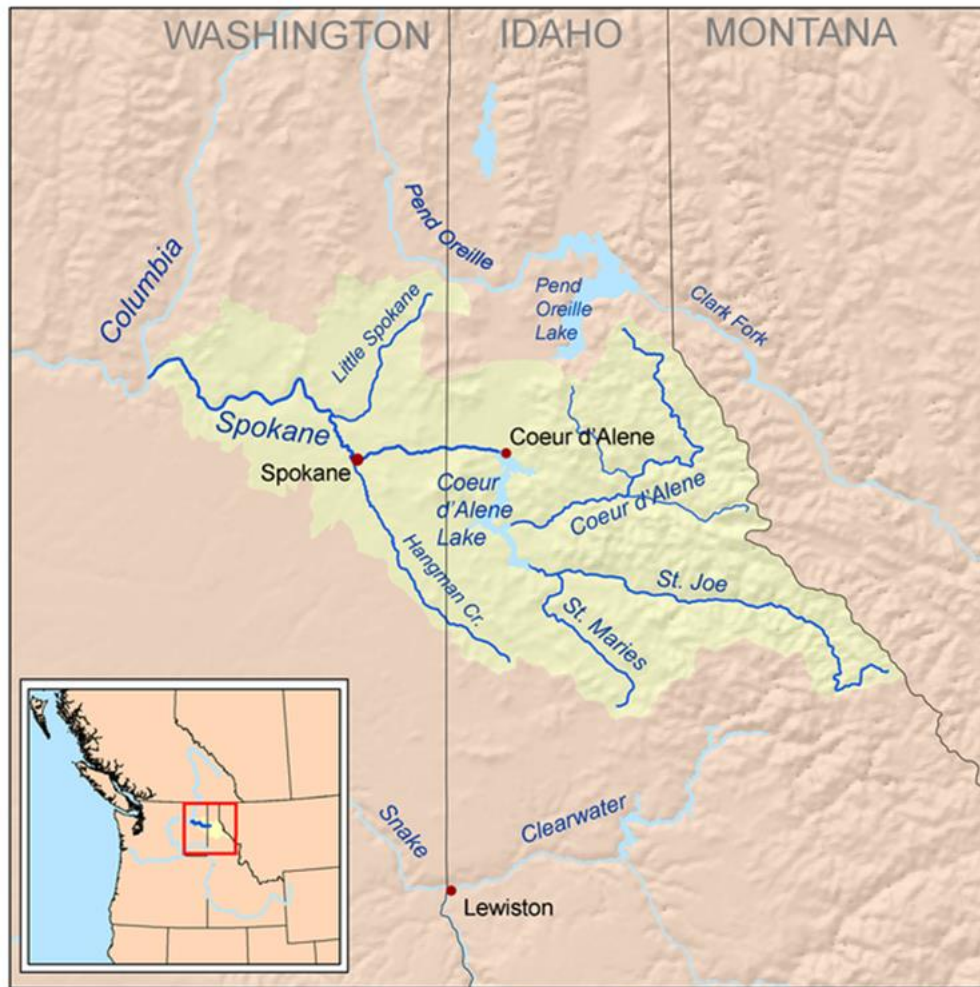
- Less than 10% of water bodies impaired for PCB have clean up plans.
- PCB is generally addressed as a *legacy issue*.
- More than 200 processes that legally generate PCB.

# “We don’t know where it comes from”

- **Myth:** PCB is no longer manufactured
- **Fact:** PCB is allowed as an inadvertent contaminant.
- **Myth:** A product designated as “PCB-free” has no PCBs
- **Fact:** A product can contain up to 50 ppm PCB and can be categorized as “PCB-free”
- **Myth:** The PCB in the environment is from a legacy of bad management practices.
- **Fact:** PCB continues to be produced and enters the environment through everyday use.

**Telling an accurate story is essential to solving the problem.**

# The Spokane River



## The watershed:

- 112 miles from Lake Coeur d'Alene to Columbia River
- 2,295 mi<sup>2</sup> in Washington
- 4,345 mi<sup>2</sup> in Idaho
- Of interest to 3 Tribes
- Connected with the aquifer

## Development:

- Legacy mining issues
- Urbanized area primarily in Washington
- 6 hydroelectric dams
- 6 municipal permittees
- 2 industrial permittees

# Water Quality Goals

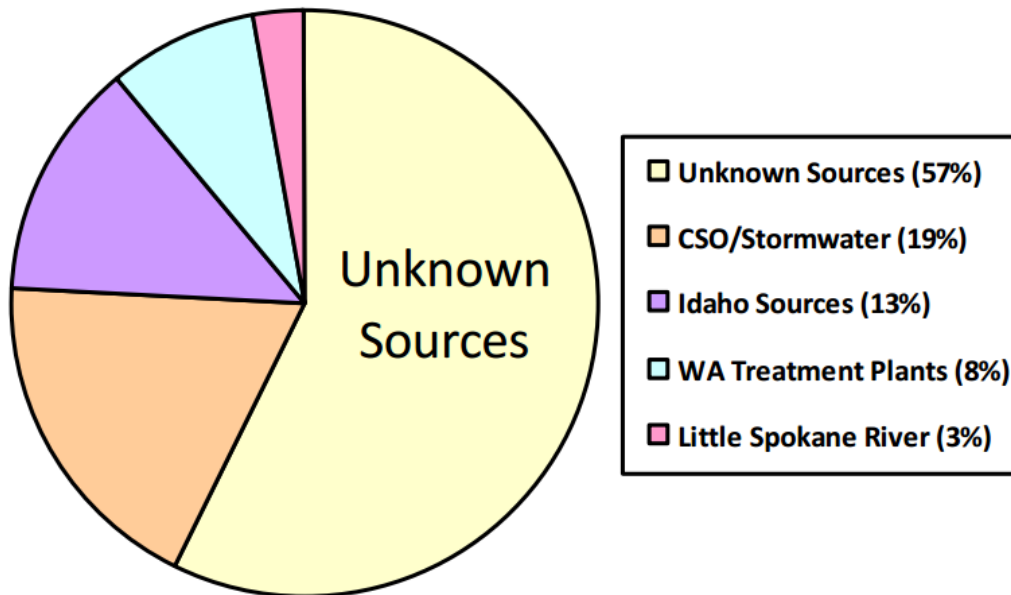
## Spokane River does not meet the Water Quality Goal for PCB

- Highest levels of PCB in state
- Fish consumption advisories since 2002
- The Spokane Tribe's 3.37 ppq is the **strictest water quality standard in the state**
- **98% reduction needed**

In Washington **15% of “background”** samples exceed the state WQS of 170 ppq

# Where Does it Come From?

**PCB Sources to Spokane River**



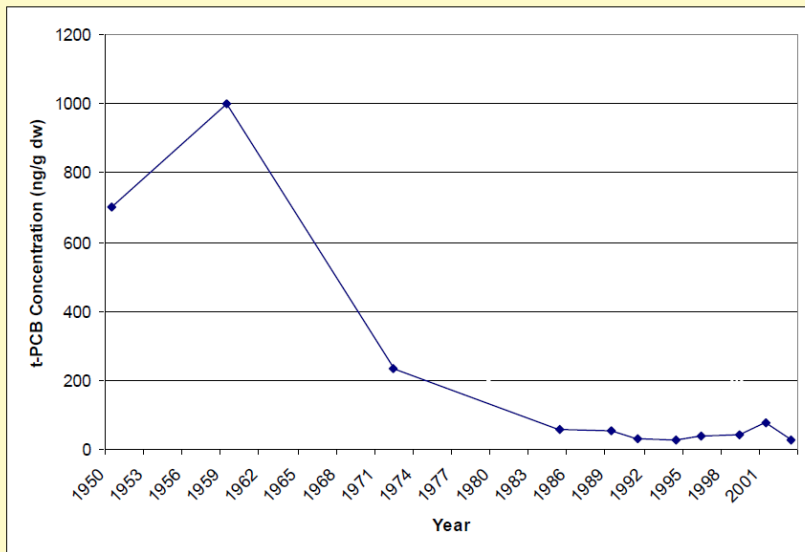
Reference: Ecology Spokane River PCB Source Assessment, 2003-2007

57% of the sources of PCB to the river are unaccounted for due to:

- Uncertainty of the Assessment methodology
- Lack of information about PCB in the watershed

One facility, a paper recycler, has identified pigments as a significant source of PCB in its feedstock and waste water.

# The Challenge



## Total PCBs in Age Dated Sediment Core (2003)

- Steep declines from 1960s through mid-1980s
- Approximately 50% decline in 20 years (1980-2000)

Norton, *Human Health Criteria Policy Forum*, February 8<sup>th</sup>, 2013.

- **Substantial PCB reductions** have been made since 1979
- **More action** is needed to achieve the water quality standard.

**In a nutshell, we need to address all of these aspects:**

- Don't make it
- Don't use it
- Use less of it
- Manage it properly
- Dispose of it properly
- End of pipe treatment

# Don't Make It

- PCBs are produced in discrete processes but used globally
- **Can reach the environment through normal use**
- PCB contaminants affect major recycling industries
  - Paper
  - Plastics, electronics
  - Automobile recycling

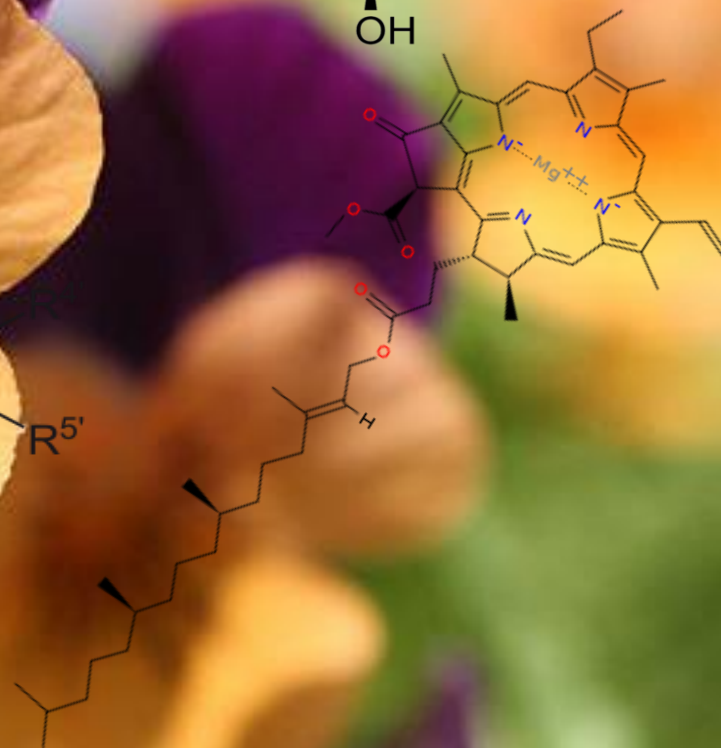
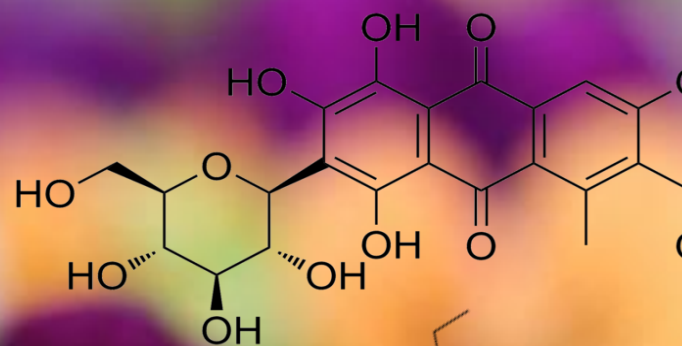
# The Moving Pieces



# Why Green Chemistry is Needed

- Color has important psychological, social, and biological significance
- Green Chemistry can
  - Provide for industry cross sector collaboration
  - Incubate new business that use a cradle-to-cradle approach
  - Create new safer, **and** environmentally benign pigments

[http://www.ecy.wa.gov/toxics/docs/trs\\_ToxicsPolicyReformWA.pdf](http://www.ecy.wa.gov/toxics/docs/trs_ToxicsPolicyReformWA.pdf)



# For More Information

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## **Spokane River Regional Toxics Task Force**

[www.srrttf.org](http://www.srrttf.org)